

# Barriers and enablers affecting patient engagement in managing medications within specialty hospital settings

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## Abstract

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**Background** Communication problems contribute enormously to medication errors and adverse events. Encouraging patient engagement can help to facilitate effective medication management.

**Objectives** To examine barriers and enablers affecting how patients engage with managing their medications in specialty hospital settings.

**Design** An exploratory qualitative design was used involving in-depth interviews with doctors, nurses, pharmacists, patients and family members.

**Setting** An Australian public, metropolitan teaching hospital was the study site and five specialty hospital settings were used, including cardiac care, emergency care, intensive care, oncology care and perioperative care.

**Results** In all, 21 health professionals, 11 patients and 12 family members participated in the study ( $n = 44$ ). Barriers and enablers involved intrapersonal, interpersonal and environmental aspects, and differences in perceptions and experiences were found between the various settings. Health professionals had preconceived notions of what was appropriate behaviour in conveying information about medications. Many health professionals stated that they deliberately chose not to provide medication-related knowledge. Different barriers for patient engagement existed in various settings – in emergency care, patients could only stay for 4 h; in intensive care, medication changes regularly happened; in cardiac care, patients were discharged prematurely due to urgent need of beds; in oncology, there was lack of availability of oncology consultants; while in perioperative care, surgeons and anaesthetists were available just before surgery.

**Conclusions** Complex barriers and enablers are associated with patient engagement in specialty clinical settings. By developing an understanding of these barriers and enablers, health professionals can help patients to understand and participate in their medication management.

## Background

Communication breakdown is responsible for more than 60% of all reported medication errors and adverse events.<sup>1,2</sup> The complexity of treatment delivered in specialty hospital settings, such as intensive care, puts patients at high risk of experiencing medication errors. These settings expose patients to high risk medications that can cause catastrophic events if medication errors occur. In addition, the critical and vulnerable nature of the patients' condition puts them at further risk of experiencing harm.<sup>3,4</sup> Effective patient engagement about medications, which arises from enhanced communication, is one way of improving medication safety.<sup>1,5</sup> Patient engagement refers to 'enabling individual patients to gain evidence-based knowledge about their condition, and the proven treatment options for it, to participate in treatment decisions that reflect their preferences, to take an active role in managing their health and treating their health conditions, and to influence health care practices' (p. 3).<sup>6</sup>

Many community and hospital-based studies have been undertaken to examine patient engagement in managing medications.<sup>7–14</sup> Interviews conducted with community-dwelling older people ( $n = 51$ ) explored their views about medication decision-making.<sup>10</sup> Findings showed perceived lack of knowledge, low self-efficacy, fear and lack of trust affected older people's desire and ability to participate in decision-making. Only one older person expressed a preference to be involved in medications. Using a survey approach with patients and health professionals ( $n = 100$ ), Mohsin-Shaikh *et al.*<sup>9</sup> examined the extent to which hospital inpatients engaged with medication safety-related behaviours. Most participants supported being involved with their medications. However, a gap existed between medication information that was desired by patients compared to what was actually received. Analysis of open-ended survey responses with patients ( $n = 325$ ) demonstrated the lack of patient knowledge regarding the service offered by hospital pharmacists as a barrier to empow-

erment.<sup>7</sup> In interviews conducted with nursing home residents ( $n = 17$ ), nurses ( $n = 9$ ) and general practitioners ( $n = 8$ ), participants acknowledged the need for better communication with and engagement of patients in medication management.<sup>8</sup> Physician control of medications helped to ensure safety, quality and continuity of care.

Previous studies have been undertaken in community settings or nursing homes<sup>8,10,12,13</sup> and in general hospital settings rather than in specialty wards.<sup>9,11,14</sup> In specialty settings, patients have complex health care needs. The dynamics of health care activities are therefore likely to be very different.

## Aim of study

To explore barriers and enablers associated with facilitating patient engagement in managing medications in specialty hospital settings, from the perspectives of patients, family members and health professionals.

## Method

### Design and sample recruitment

An exploratory qualitative design was used involving in-depth interviews. An Australian public, metropolitan teaching hospital was the study site. We used five specialty settings: cardiac care, emergency care, intensive care, oncology care and perioperative care. Two members of the research team completed all interviews. We adopted a semi-structured approach to questions posed (Table 1), and we used probing questions to elicit further information. In developing the interview schedules, we examined existing literature about patient engagement and obtained input from health professionals not involved in the study.

Many information sessions were held with health professionals in each setting to facilitate recruitment. Of those staff members who showed interest in participating, written information was provided. Health professionals gave written consent of those who agreed to

participate. The inclusion criterion for health professionals was qualified doctors, nurses or pharmacists employed at least 1 day/week in a specialty setting. We excluded any casually employed health professional, and we purposively accessed health professionals of different levels of experience for interviews.

Due to the potential high acuity of patients, a member of the research team spoke to the nurse unit manager of each setting to seek information about possible patients or family members who could be approached for an interview. Inclusion criteria comprised patients aged 18 years or over, who could understand written and spoken English, who were admitted to one of five specialty settings, and who were competent and willing to consent (e.g. just after their discharge from intensive care, or after their admission to a surgical unit following perioperative care). Exclusion criteria comprised patients who were physiologically

unstable or required constant intensive treatment. Inclusion criteria for family members were individuals who could understand written and spoken English, and who had a current relative in one of the five settings. We excluded family members whose relatives were physiologically unstable or required constant intensive treatment. Patients of different ages with varying medical conditions, and family members of different ages, were purposively accessed for interviews.

### Procedure

All interviews with patients and family members were conducted either at the bedside or in a separate, quiet room. Interviews with health professionals were conducted in a quiet room of the clinical setting. The two researchers who conducted interviews addressed interviewer bias by keeping a reflective journal (Table 2).

**Table 1** Semi-structured interview schedules

#### Patients

- What are your overall impressions of how health professionals talk to you about your medicines during your hospital stay?
- How involved do you feel relating to decisions made about your medicines during your hospital stay?
- What things do you think are important to discuss with the doctor about your medicines?
- What things do you think are important to discuss with the nurse about your medicines?
- What things do you think are important to discuss with the pharmacist about your medicines?
- How do doctors communicate with you about your medicines during the hospital stay?
- How do nurses communicate with you about your medicines during the hospital stay?
- How do pharmacists communicate with you about your medicines during the hospital stay?
- How well do you understand how to use your prescribed medicines before you leave hospital?
- Is there anyone else with whom you have been able to talk to about your medicines?
- What type of information have you received in hospital to help you to use your medicines?
- What type of information have you received outside the hospital to help you to use your medicines?

#### Family members

- What things do you think are important to discuss with the doctor about your relative's medicines?
- What things do you think are important to discuss with the nurse about your relative's medicines?
- What things do you think are important to discuss with the pharmacist about your relative's medicines?
- How do doctors communicate with you about your relative's medicines during the hospital stay?
- How do nurses communicate with you about your relative's medicines during the hospital stay?
- How do pharmacists communicate with you about your relative's medicines during the hospital stay?
- How well do you understand about how to help your relative to take their medicines?
- What type of information have you received in hospital to help your relative to use their medicines?
- What type of information have you received outside the hospital to help your relative to use their medicines?
- How can information be improved in the way it is made available to you about your relative's medicines?
- How well do you think your concerns are taken into consideration regarding decisions made about your relative's medicines?

#### Health professionals

- How do you communicate with patients about their medicines?
- What resources do you provide for patients about their medicines during their hospital stay?
- How are patients' medicine needs coordinated within the hospital?
- How are patients' medicine needs coordinated outside the hospital?
- What are the gaps in how patients' medicine needs are coordinated inside and outside the hospital?

### Data analysis and rigour

All interviews were audiotaped and transcribed verbatim. Three members of the research team independently checked all transcripts for accuracy. Thematic analysis was undertaken using Ritchie and Spencer's<sup>15</sup> framework approach, which involved: familiarization or gaining an overview of the data; identifying a thematic framework to derive recurring patterns; indexing or assigning labels to the data; charting data and annotating with a particular theme; and mapping and interpretation. We compared and contrasted data to search for patterns and connections using a constant comparative analysis. Existing patterns and connections were constantly reorganized as themes and sub-themes were refined. Data analysis involved an iterative process, and interviews continued until repetitive patterns of findings started to occur. Three members of the research team conducted data analysis independently, and the whole team verified data interpretation by examining the themes and subthemes arising from the data. The whole team worked together to resolve any conflicts in analysis.

Recurring patterns started to occur when we conducted between seven and nine interviews for each clinical setting. We addressed rigour in diverse ways through the research process (Table 2).

### Results

In total, 41 interviews were conducted, with 44 individuals participating. The sampling population of health professionals and patients was  $N = 818$  (Table 3). To protect privacy, we assigned codes to participants to facilitate ease of identification. We also removed personal identifying information from transcripts. While we intended to conduct individual interviews, in two interviews occurring in perioperative care and intensive care, two and three family members participated together, respectively (Table 3).

Three themes were identified from interviews (Table S1). Intrapersonal barriers and enablers involved how the patients' personal environment affected engagement. Interpersonal barriers and enablers related to how health professionals interacted with patients. Environmental barriers and enablers concerned how specific characteristics of specialty settings affected engagement. In the specialty settings, none of the patients managed their own medications.

#### Intrapersonal barriers and enablers with patients and family members

Intrapersonal barriers and enablers involved situations within the patients' personal environment that affected the possibility of engagement. These situations included changes in

**Table 2** Trustworthiness and rigour of research process

|                 |  |
|-----------------|--|
| Credibility     | Enabled by prolonged engagement in the specialty settings; multiple readings of the data transcripts by different members of the research team; use of different members of the research team to independently analyse data; and triangulation of data findings by examining how the perspectives of patients, family members and health professionals compare with each other   |
| Dependability   | Enabled by keeping a field journal at each stage of the research process; maintaining a reflective journal by interviewers; and regular meetings with members of the research team to discuss decisions and choices made about methodological issues throughout the study, and the reasons for these decisions. Each stage of the research was identified and accurately documented<br>In the reflective journals, interviewers documented assumptions made about participants; assumptions made about participants' responses to questions; ways in which personal values, beliefs, emotions and feelings affected interjections made; listening skills and behaviour of interviewers; and ways in which location of interviews in clinical settings altered how interviewers related to participants, and how participants related to interviewers |
| Transferability | Enabled by seeking out individuals with diverse demographic characteristics in each of the five specialty practice settings to ensure the findings can be transferable to similar contexts; and development of comprehensive descriptions of data findings   |
| Confirmability  | Enabled by keeping an audit trail that traced the course of the research step-by-step through the decisions made by the research team  |

**Table 3** Demographic characteristics of participants (*n* = 44)

| Variable   | <i>n</i> |
|--|----------|
| Health professionals   |          |
| Discipline group   |          |
| Nursing  | 12       |
| Medicine   | 4        |
| Pharmacy   | 5        |
| Specialty practice setting   |          |
| Cardiac care   | 5        |
| Emergency care   | 4        |
| Intensive care   | 3        |
| Oncology care  | 3        |
| Perioperative care   | 6        |
| Position in the organization   |          |
| Graduate nurse   | 2        |
| Senior clinical nurse  | 4        |
| Nurse educator   | 2        |
| Clinical nurse specialist  | 2        |
| Clinical nurse consultant  | 1        |
| Nurse unit manager   | 1        |
| Senior pharmacist  | 5        |
| Medical intern   | 1        |
| Medical fellow   | 2        |
| Medical consultant   | 1        |
| Mean age = 36.7 years (SD = 9.5 years),<br>Range: 23–56 years          |          |
| Patients   |          |
| Reason for presentation or admission to hospital                       |          |
| Chest pain, shortness of breath and<br>myocardial infarction           | 3        |
| Community acquired pneumonia   | 1        |
| Liver transplant for liver failure                                     | 1        |
| Severe abdominal pain and gastro-<br>oesophageal reflux                | 1        |
| Unresolved chronic urinary tract infection                             | 1        |
| Surgery and chemotherapy for adrenocortical<br>carcinoma               | 1        |
| Surgery and chemotherapy for stage<br>3 breast cancer                  | 1        |
| Surgery and chemotherapy for malignant<br>neoplasm of caecum           | 1        |
| Surgery, radiation and chemotherapy<br>for metastatic rectal carcinoma | 1        |
| Specialty practice setting   |          |
| Cardiac care   | 2        |
| Emergency care   | 3        |
| Intensive care   | 2        |
| Oncology care  | 2        |
| Perioperative care   | 2        |
| Languages other than English spoken at home                            |          |
| Maltese  | 1        |
| Lebanese   | 1        |
| Egyptian Arabic  | 1        |
| Greek  | 1        |

**Table 3** Continued

|  | <i>n</i> |
|--|----------|
| Mean age = 49.9 years (SD = 13.3 years), Range: 20–<br>67 years  |          |
| Family members   |          |
| Specialty practice setting of where family member's<br>relative was admitted   |          |
| Cardiac care   | 1        |
| Emergency care   | 2        |
| Intensive care   | 4        |
| Oncology care  | 2        |
| Perioperative care   | 3        |
| Languages other than English spoken at home  |          |
| Vietnamese   | 1        |
| Italian  | 1        |
| Mean age = 47.6 years (SD = 12.7 years), Range: 28–<br>68 years  |          |
| Cardiac care had one 33-bed cardiology unit and one 11-bed elective<br>surgery unit. Emergency care had one 50-bed unit. Intensive care<br>had one 30-bed general unit. Oncology care had two 30-bed<br>inpatient units and one 10-bed day oncology unit. Perioperative care<br>had six theatres and 18 recovery beds. All settings were operating at<br>full capacity at the time when interviews were undertaken. The<br>whole population of patients at the time of interviews was 218<br>patients. Interviews were conducted with 11/218 9 100 = 5% of<br>patients. The whole population of health professionals in the five<br>settings was 600 equivalent full time people. Interviews were<br>conducted with 21/600 9 100 = 3.5% of health professionals. |          |

patients' health circumstances and changes in their family circumstances.

#### *Changes in patients' health circumstances*

Among the patients interviewed, many were diagnosed with critical conditions that impacted on their ability to engage about their medications. Such conditions included diagnoses of acute myocardial infarction or cancer:

The health professionals...were keeping me up-to-date at every stage but unfortunately for me, they gave me too much information at one stage...they had to tell me for my own benefit, but it gave me a huge shock. Not everybody is jumping with joy when you get told you have just had a heart attack. (Pt2-ED)

Various situations affected patients' lack of ability or desire to be engaged, including their deterioration in pre-existing health conditions, their lack of interest in seeking out information and difficulty of patients of non-English speaking backgrounds in negotiating care. Patients who experienced deterioration in their pre-existing



health conditions altered their ability to interact effectively with health professionals during their hospital stay. In the following excerpt, the intensive care nurse spoke about a patient with type-2 diabetes and dementia who found it difficult to accept assistance from her family and rehabilitation services because of her confusion:

We have someone with insulin dependent diabetes [sic] and dementia. She has her own personality associated with her and she has declined rehabilitation. Her family support her. They can't reason with her but they just let it go. Knowing that, however, she will eventually kill herself by overdosing herself on insulin. She came back last week with a blood sugar level of 1 [mmol/l]. (N1-ICU)

While some patients asked many questions relating to their changed medications following hospital admission, others were not interested in seeking out this information. Patients' level of interest about their medications often determined the amount of information they received from health professionals. As explained by the following nurse:

People will say 'Look, I'm not really interested in finding out all this information'. Other people ask lots of questions and so you give them a little bit more information. (N1-CC)

At discharge, patients of non-English speaking backgrounds encountered problems in understanding the medication changes in their health situation as interpreters were scarce. Interpreters' availability was limited due to difficulties in coordinating their visits with patient discharge. When interpreters were organized for discharge, they were booked by pharmacists for a series of patients, which potentially reduced the amount of time they devoted to each patient.

Patients also had a tenuous state of health at discharge. Thus, their ability to assimilate information may not have been optimal at discharge:

A lot of people are in various states of health when they are receiving medications, so their understanding of what they're taking is completely variable. When they get their tablets to go home and they start getting better, that's when a lot of their questions start. (N2-CC)

### *Changes in family circumstances*

Changes in family circumstances impacted on patients' engagement about their medication management. Death or separation from a spouse caused enormous stress for patients, sometimes leading them to neglect their medication responsibilities:

My wife was sick for 5 years with cancer. And that's why I just gave up and didn't bother [about medications]. I would rather care for her than care for myself. It was really bad for me...but now I think I just got to continue on with it. (Pt1-CC)

Changes in family circumstances were also associated with family members having to cope with their relative being admitted to hospital with a serious illness or injury. In the following interview excerpt, a nurse explained how a family member played an educative role with the patient:

The family member was trying to read the bag [of heparin] and what was in there...and he was explaining [to the patient that] he's on a blood thinner and this is why he's on it. (N1-CC)

This education role also extended to outside the hospital, where family members actively sought to check for adverse reactions relating to medications:

Once we have been given a drug, I sit down and do a bit of research on the Net about it, read the information that we get with it and try and keep up-to-date with things that way because they [health professionals] look for side effects. She's [patient] had a few bad reactions to quite a few of the drugs that they give her. (FM1-CC)

In the following situation, due to their proactive stance towards a nurse administering medications to the patient, the family members prevented medication errors from occurring:

Last Thursday with his specialist, he [the patient] was taken off everything from magnesium, calcium and the multivitamin and an antiviral medication. On Saturday, when Mum and I were in seeing him, all those drugs...were given to him by a nurse...So without our intervention, query-

ing this and saying he shouldn't be on all these things, he would have taken all those things. (FM3-Peri)

### Interpersonal barriers and enablers with health professionals

Interpersonal barriers and enablers related to how health professionals interacted with patients. There were three subthemes associated with this theme. These concerned forms of communication, continuum of trust and provision of information.

#### *Forms of communication*

Communication between patients and health professionals generally occurred orally. Patients acknowledged that sometimes it was difficult to absorb information in this way. The following patient admitted after an acute myocardial infarction acknowledged the struggles involved in receiving information orally:

'What did he [doctor] say?' Or what did you say?' Because you know after a while, too much information gets in and it gets lost in translation. (Pt1-CC)

Patients commencing warfarin for the first time were always given a booklet. This booklet explained the adverse effects that patients should observe with warfarin, and about how the medication should be taken. Health professionals also provided booklets to patients who were admitted following an acute myocardial infarction, which contained some information about medications that patients were required to take following discharge. The following pharmacist showed the importance of combining written and oral information to facilitate patient engagement and understanding:

I always say to people 'You're going to forget half of what I'm going to tell you so it is here in the book [about warfarin]'. But I tell them anyway...But then when we go to discharge them, we come back to them and actually question them rather than say the same thing again. So, 'When will you take this? What will you take it with? What are your signs of bleeding?' (Ph1-ED)

#### *Continuum of trust*

A continuum of trust existed between patients and health professionals in terms of patients' expectations and desires to be involved. Some patients had absolute trust in health professionals and did not believe it was their role to ask questions about their medications. A 45-year-old woman admitted with breast cancer and receiving cytotoxic therapy as a day patient stated:

I am one of those 'go with the flow people'. So if [the doctors] say to me, 'You have to have that medicine', I'm like, 'Yep, I'll have that'. So I am not one of those ones who say, 'Why can't I have something else? Do I need to have it?' I'm in a hospital. They're the doctors. They know what they're talking about, so I just do what they say. (Pt3-Onc)

Other patients were interested in asking questions and desired to be involved. However, they expressed fear of appearing as though they were complaining, which was compounded by their experiences of serious illness. In one situation, a 50-year-old woman who was admitted to intensive care for a severe cerebral bleed recognized she experienced an allergy with one of her prescribed medications:

The doctors put a coil in my brain because I had a bleed...I got an allergic reaction. And I said, 'Look, obviously I have been given something that is not agreeing with me'. And a few days later, the doctors did apologize and said, 'Yeah, look, something has slipped through with penicillin in it'. I have got an SOS bracelet...so it is a worry when they don't know how it happened...I think it is nice to know what they're giving you and why...But I don't make waves, you know, which is not always a good thing. But it is hard when you are unwell. (Pt2-ICU)

Some patients also had expectations of being actively involved in discussions with health professionals. Due to the nature of work in specialty settings, all patients and family members identified that health professionals were very busy and it was often difficult to dedicate adequate time to speak. A 67-year-old man admitted for a liver trans-

plant identified that health professionals did not always involve patients in their discussions when opportunities existed for such discussions to occur:

The doctors talk among themselves about what might happen [during the ward round]. I said to one of the doctors who was the head of the team as they were leaving... 'You've got a great ability of talking very quietly to your colleagues – is that because you don't want me to hear? Or is it part of your mannerism?'... It was a shocked response. (Pt1-Peri)

#### *Provision of information*

Some health professionals had preconceived notions of what was appropriate behaviour in conveying information about medications. During patients' hospital stay, health professionals indicated that they did not want to 'bombard patients and family members with too much information about medications', despite finding that 'families are often really interested and ask lots of questions' (N2-Peri). Instead, health professionals assumed that patients and family members were more concerned about the illness or injury experienced. As a result, health professionals acknowledged that they deliberately chose to speak in vague terms about medications, using language such as: 'Just giving him something to help him to settle' and 'We're making the patient feel more comfortable with all his tubes and drains'. In some situations, family members and patients would have appreciated more information, as shown by comments such as 'I felt I had to ask a few times to clarify about the sedation', (FM1-ED) and 'The doctors come around in their little group...and they could say this is the plan for your medications. (Pt1-ICU)

There was complex variability in the amount of information conveyed about medications during patients' hospital stay, based on the type of clinical setting, whether a medication was newly prescribed, and whether a patient was likely to continue to receive a medication in the long term. As mentioned by a doctor in cardiac care:

Most of the information is about new tablets that we're giving them or if a change to what

they've had or increasing what they've had. And not so much discussion on what they've had before unless there's some contraindication to their illness. (N4-CC)

Aside from oncology, health professionals in other environments tended to only provide non-specific information. In oncology, comprehensive information was given on cytotoxic and other therapies administered, including details on possible side effects. In other environments, if medications were likely to be used for a short period in hospital to treat a serious condition, such as antiarrhythmics or inotropic agents, health professionals believed that patients and family members did not need to know about them. However, health professionals did not check if this assumption was correct. Of the 23 patients and family members interviewed, 21 indicated that they valued receiving this information:

I don't know the names of any of the medications. They've given her one a couple of times – I think it was adenosine...it slows the heart rate down...they put her on an ECG [electrocardiogram] and her heart rate was up and so they had to give her a couple of doses...and [patient] said 'I had a few more episodes and the doctors pumped [me] more with that stuff'. And I went home and I read up how it works, why it works, and why they give it, to try and keep myself up to speed. (FM1-CC)

The following nurse indicated the importance of not making assumptions of what and how to communicate with patients:

I think for nurses making assumptions about what patients understand, think, believe or want [is an issue], so...ask people how they feel. Asking people what they understand, and demystifying a lot of people's concepts... 'I'm going to tell you about this and you can ask me some questions at the end'. And so they're actually interactive sessions. (N1-Onc)

There was complex variability in the level and quality of feedback for understanding about medications. Information appeared to be unidirectional when conveyed by doctors, without checking to see whether patients actually understood what was being said.



I often see doctors standing at the end of the bed, just talking gibblety-gook...They don't check the understanding of the patient by saying 'So what are you meant to be doing when you leave?'...And that is not the exception. It is the rule. (Dr1-ED)

Conversely, there were examples of when family members' and patients' medication concerns were sensitively addressed by seeking feedback for understanding:

There's been times where Dad [the patient] hasn't been able to make decisions or Dad's actually requested that they speak directly to Mum about it all...and they have been most considerate and respectful...with their decision-making. And actually, it was more of a discussion rather than, 'This is what we're saying to you and this is what's going to be'. We had a discussion and then wanted to gauge our opinion with what they were proposing. (FM2-Peri)

### Environmental barriers and enablers

Environmental barriers and enablers affected patient engagement. There were two subthemes associated with this theme. These were: productivity and efficiency, and involvement of different specialty groups.

#### *Productivity and efficiency*

Efficiency and productivity underpinned patients' movements through admission, discharge and transfers. Managers of cardiac care and emergency care wards commonly used a separate waiting space to place patients who were preparing to be discharged, but who had not yet spoken with the doctor or followed up with the pharmacist about their medications. This pharmacist perceived it was very risky placing patients in a separate waiting space:

The unit is often discharging patients very early in the morning because it needs the bed. They put the patient down in our waiting area...in the transit lounge...The person is just sitting there...They're surrounded by other patients so there's no privacy. Often it's quite distracting if other people have kids...That's where you have to do the discharge communication...and I think it is a big barrier to communicating with patients. (Ph1-CC)

Attempts to provide productivity and efficiency gains also led to information overload at discharge. Due to a 4-h rule in emergency care, where patients were expected to be moved within a 4-h period to another setting, or the hospital faced government penalties, insufficient time could be devoted to medication discharge education:

In a perfect world, it would occur before they are discharged while they've got time [to assimilate the information] and you could sit and explain results. (Ph1-ED)

Many patients were discharged home on several medications. However, due to time pressures and the stressful nature of clinical environments, there was information overload at discharge. Pharmacists often did not know what medications patients were going to take at home, until just before discharge. In addition, pharmacists spent considerable time during their working shift attempting to reconcile patients' medications they were taking at home with those they were taking in hospital. There was less time available to undertake impromptu medication education at the bedside, and less time to conduct discharge education.

#### *Involvement of different specialty groups*

Patients' complexity of treatment meant they were often involved with different medical teams to treat their illnesses. Not only were these medical teams situated in different areas inside and outside the hospital, but on some occasions, patients had to wait several weeks to see a specialist. In the following example, an oncologist talked about the time delay between surgery to allow wound healing and the consultation to enable chemotherapy commencement:

With patients who have surgery to remove their cancer, I can see those patients this afternoon in the clinic but then they may not start chemotherapy for 4–6 weeks. In that time, it is difficult to recall exactly what decisions were made and what the patients were like...And because I see 10–20 patients a day, it's a lot of patients to cover. (Dr1-Onc)

## Discussion

This study provides new insights into complex barriers and enablers affecting patient engagement about how their medications were managed in hospital. These barriers and enablers were influenced by intrapersonal, interpersonal and environmental aspects. The findings also demonstrated the intricate and diverse ways in which five specialty hospital settings affected patient engagement.

After being diagnosed with a serious illness, patients preferred to remain silent rather than to ask health professionals about their medications. Patients felt powerless to change their situation due to factors such as illness, fear of dying, confusion and cognitive changes that impaired engagement, as found in past research.<sup>16–18</sup> Nevertheless, there were situations where family members attempted to bridge the gap by seeking out information from health professionals and by clarifying medication details for patients.

Patients with multiple, pre-existing health conditions, which were made worse by health deterioration, were unable to engage effectively about their medication management. Health professionals also experienced a sense of powerlessness in dealing and engaging with these patients. The complexities associated with the effects of multiple health conditions on actual patient involvement have not been extensively explored in the research literature. Improving collaborations between health professionals situated in hospital and community settings, facilitating timely medication reconciliation and stopping unnecessary medications may help to promote patient engagement in these difficult circumstances.

Barriers in specific settings stifled family involvement, which translated to a lack of patient engagement. In intensive care, the deliberate action of health professionals to limit the amount and extent of medication information provided to family members, reduced opportunities for involvement. Family members acted as patient advocates if they felt their relative was adversely affected by medications prescribed. In perioperative care, family members were confronted with the fear of impending surgery,

which sometimes affected their ability to be involved and restrained patient engagement. Past work has demonstrated the underestimated value of involving family members in promoting patient engagement.<sup>11,14</sup>

Productivity and efficiency were important environmental aspects affecting all settings in different ways. The findings demonstrate the specific nuances of each setting in creating barriers to patient engagement. In emergency care, a federal government policy required all patients to be moved within a 4-h period. Past work has linked this policy to safety and quality concerns, as well as increased adverse outcomes.<sup>19</sup> In cardiac care, due to the urgent need for beds, patients were discharged to a busy waiting area. In busy waiting areas, it has been shown that health professionals experience difficulties in providing individualized discharge education to patients.<sup>20</sup> Health professionals in intensive care preferred not to provide medication education because they did not know whether medications were likely to change when patients moved to other wards. Health professionals appeared to possess a paternalistic attitude in intensive care about the adverse effects of high risk medications in the belief that patients and family members would worry excessively if they knew about adverse effects. In the oncology environment, visiting oncologists came to the hospital once a week to maintain efficiency in their consultation periods, which led to difficulties in following up on medication issues.

In the perioperative setting, surgeons and anaesthetists did not appear until just before the surgery was about to start. Surgeons, anaesthetists and perioperative nurses spent considerable time moving across operating rooms and the post-anaesthetic care unit to deal with patient movements in these different settings. It was therefore difficult for patients to have any medication concerns addressed beforehand in a thorough manner. As some patients were not informed adequately about how to manage their medications before surgery, they could have experienced adverse events, especially with high-risk medications, such as insulin and warfarin.

A staged approach should be used for the provision of medication information during patients'

hospitalization, in preference to conveying this information at patient discharge from hospital or from a particular clinical setting. By providing information in small amounts during the patients' stay, it could mean that discharge planning is more focused on reinforcing information delivered. In providing this information in stages, there should be enhanced involvement with family members, especially to facilitate as much understanding as possible in patients who have cognitive deficits or who have sustained an unexpected change in their health situation. Provision of information in small amounts can deal with medication problems when the time barriers remain the same. In view of time barriers in the clinical settings, there is an urgent need for more interpreters and pharmacists in hospitals. Patients should be given the opportunity to receive information about medications that may not necessarily extend beyond the current clinical setting, such as intensive care or perioperative care.

Health professionals need to learn how to engage with patients proactively and be truly present in the communication encounter. They should listen and ask relevant questions. Particular attention needs to be paid to patients with complex psychosocial issues that may prevent them from being engaged. To reduce power differentials, health professionals should sit at the patient's eye level and check regularly for understanding. Oral information can be easily forgotten especially in high stress areas such as emergency care. Subsequently, health professionals need to provide more written sources of information to aid retention of medication details. Written information must be readable at the patients' health literacy and numeracy levels, and be suitably designed in terms of font size and type and pictorial depictions of medications. At post-discharge, improved communication is needed with general practitioners and community pharmacists to facilitate patient engagement when patients go home.

### Limitations

Only one public, metropolitan hospital was involved, and individuals situated in regional, rural or private hospitals may have different expe-

riences. We attempted to involve people of non-English speaking backgrounds but only individuals who could understand written and spoken English were included. Individuals who cannot understand English are at risk of miscommunication and medication errors. While interviews continued until repetitive patterns of findings started to occur, it is important to acknowledge the small sample size of the study and that other individuals not interviewed may have had different views. The imbalance of interviewing 12 nurses compared with only four medical and five pharmacy workers may have affected results. Family members who participated together could have also influenced interview outcomes. Different opinions may have been gleaned by involvement of wards where care is less intense but still specialized, such as in respiratory conditions and gastroenterology. Further work could consider comparisons in communication within surgical, medical, and diverse specialty settings.

### Conclusions

In this study, some health professionals preferred to rely on pharmacists to provide patient engagement about medications; communication about medications often occurred at inappropriate times in distracting, stressful situations and some health professionals appeared to lack the skills to engage effectively with patients. Improved opportunities for patient engagement are needed for managing medications in specialty practice settings. By encouraging patients and family members to talk about medications, and to explore their beliefs and expectations about medications used in hospitals, health professionals can help patients to make sense of what happens in how their medications are managed.

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### Conflict of interest

No conflicts of interests have been declared.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article:

**Table S1.** Barriers and enablers from the five clinical settings in relation to patient engagement with medications.

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